

Swanson River Satellites Natural Gas Exploration and Development Project

Draft Environmental Impact Statement

Executive Summary

**United States Fish and Wildlife Service
Alaska Region**

July 2002



COVER SHEET

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Type of Action: Administrative (X) Legislative ()

Area of Proposed Effect: Kenai National Wildlife Refuge, Kenai Peninsula, Alaska

Lead Agency: United States Fish and Wildlife Service, Alaska Region

Cooperating Agencies: U.S. Bureau of Land Management; U.S. Army Corps of Engineers

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Comment Period and Public Hearing: The comment period ends October 1, 2002. There will be a public hearing on September 5, 2002 from 7:00 to 9:00 p.m. at the Aspen Hotel, 326 Binkley Circle, Soldotna, Alaska. There will be an additional public hearing on September 17, 2002 from 2:00 to 4:00 p.m. at the U.S. Fish and Wildlife Service, 4401 North Fairfax Drive, Room 200A, Arlington, Virginia.

Abstract: Union Oil Company of California (Unocal) and its partners, Marathon Oil Company and Cook Inlet Region Incorporated (CIRI), have applied to the U.S. Fish and Wildlife Service (USFWS) for a right-of-way (ROW) permit for a proposed natural gas project within the Kenai National Wildlife Refuge (KNWR), Kenai Peninsula, Alaska. The Bureau of Land Management (BLM) and the U.S. Army Corps of Engineers (USACE) are cooperating agencies based on their respective permit requirements. The KNWR is a Conservation System Unit established by the Alaska National Interest Lands Conservation Act (ANILCA), Public Law (PL) 96-487, and managed by the USFWS. However, because of provisions of the Alaska Native Claims Settlement Act (ANCSA) (PL 92-203 [as amended by 94-204]), and Federal oil and gas leasing activity there is a variety of surface and subsurface land ownership within the Project Area. Regulations at 43 CFR 36.10 require that adequate and feasible access be granted to the owners of valid inholdings, in this case CIRI, for economic and other purposes, subject to reasonable regulation to protect the natural and other values of the refuge.

Document Preparation: A third-party draft environmental impact statement (DEIS) has been prepared under the National Environmental Policy Act (NEPA). Funding was provided by Unocal, and all work was directed by USFWS. MWH Americas, Inc. (MWH), Anchorage, Alaska provided technical assistance to USFWS in the preparation of the DEIS.

EXECUTIVE SUMMARY

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THE PROPOSED ACTION

The U.S. Fish and Wildlife Service (USFWS) is evaluating a right-of-way (ROW) permit application for a proposed natural gas project within the Kenai National Wildlife Refuge (KNWR), Kenai Peninsula, Alaska, and is the lead agency for preparing this Draft Environmental Impact Statement (DEIS). The U.S. Bureau of Land Management (BLM) and U.S. Army Corps of Engineers (USACE) are cooperating agencies. BLM issues a permit to drill where federal oil and gas leases exist, while USACE issues a permit for the placement of fill material in waters of the United States under Section 404 of the Clean Water Act. This DEIS has been prepared in accordance with the requirements of the National Environmental Policy Act (NEPA) and regulations at 40 CFR Parts 1500-1508

THE PROJECT AREA

The Project Area lies within the boundaries of the KNWR, a Conservation System Unit established by the Alaska National Interest Lands Conservation Act (ANILCA) (Public Law (PL) 96-487), and managed by the USFWS. However, because of provisions of the Alaska Native Claims Settlement Act (ANCSA) (PL 92-203 [as amended by PL 94-204]), and Federal oil and gas leasing activity there is a variety of surface and subsurface land ownership within the Project Area. Private subsurface and surface property rights within the Project Area were established by oil and gas lease sales by the

U.S. Department of the Interior (USDOI) prior to ANCSA. Private surface and subsurface property rights were conveyed to Cook Inlet Region, Inc (CIRI) and Tyonek Native Corporation (TNC), pursuant to ANCSA in the settlement of Alaska Native Corporation land claims in the Cook Inlet region. Regulations at 43 CFR 36.10 require that adequate and feasible access be granted to the owners of valid inholdings, in this case CIRI, for economic and other purposes, subject to reasonable regulation to protect the natural and other values of the refuge. USFWS is also required to make available to CIRI, its successors and assigns, sand and gravel as is reasonably necessary for the construction of facilities and rights-of-way appurtenant to the exercise of the rights conveyed by the United States.

THE PROPOSED PROJECT

Union Oil Company of California (Unocal) currently produces oil and natural gas from the Swanson River Field (SRF) in the KNWR. In January 2001, Unocal submitted a ROW application to the USFWS to conduct exploration and production at two natural gas fields, known as the East and North Swanson River Satellites (East and North SRS). Throughout this DEIS, reference is made to Unocal as the Applicant, although the project would be implemented as a partnership which includes Marathon Oil Company (Marathon) and CIRI.

Figure ES-1 shows the location of the Proposed Project. The East SRS is located approximately 5 miles east of the existing SRF and the North SRS is located approximately 3 miles north of the existing SRF. The Proposed Project does not include oil development, and oil development would not be authorized under this ROW permit.

This DEIS considers the impact of the total project, although overall development of the project is proposed as a series of discreet elements with “go/no-go” decisions at the end of each element. A go decision will mean the next element will be started; a no-go decision will mean that restoration of the completed element will be implemented.

At the East SRS, initial activities will be limited to an approximately 6.4-mile gravel access road, construction of one drill pad, and drilling up to four exploration wells to assess the prospect. This access road, East Swanson Road 1 (ES-1), will run from the SRF to East Swanson Pad A (ES-A). If data from exploration wells indicate commercially viable natural gas resources, field delineation and development wells might be drilled and production facilities installed on ES-A. Pipelines and utility lines between the SRF and ES-A will be installed adjacent to the access road.

With a commercially viable discovery of natural gas at ES-A, an additional 1.9 miles of gravel road will be constructed to East Swanson Pad B (ES-B). From ES-B, directional-drilling techniques will be used to reach natural gas targets to the north and east of the Swanson River. Discoveries of commercially viable quantities of natural gas in either target will result in the placement of production facilities on ES-B and installation of a buried pipeline/utility system adjacent to the gravel road to ES-A.

The North SRS encompasses existing Federal oil and gas leases within the Birch Hill Unit (BHU). Exploration for natural gas was conducted at one BHU well (BHU 22-25) in 1965, and natural gas reserves are known to exist. Initial development will involve construction of about 3.5 miles of gravel access road. This access road, North Swanson Road 1 (NS-1), will extend northward from existing access within the SRF to BHU 22-25. The existing pad at BHU 22-25 will be enlarged to accommodate additional drilling. Production facilities will be installed on the pad and a pipeline/utility system will be buried adjacent to the gravel access road. An additional new pad (North Swanson Pad A [NS-A]) might be required for field delineation and development. The proposed access road to BHU 22-25 is located to provide direct access to NS-A.

Each satellite development will require installation of a 4- to 10-inch pipeline, which will tie into the existing pipeline infrastructure at the SRF. Production facilities at each pad may include: a heater separator building, a glycol dehydrator building, a methanol building, a wellhouse building, a natural gas-fueled generator building, and an electrical/control building. All facility locations, including gravel roads and pads, will be located and designed for removal when natural gas reserves are depleted.

Gravel for the proposed project would be made available from on-Refuge sources specified by the USFWS through a special use permit. Two existing, and three new gravel sources have been identified for potential use. The existing sources contain a limited amount of available gravel, much of which will be required for continued operation of the SRF. One new source (G-7) has been determined to contain the volume

of gravel (278,600 cubic yards) necessary for the proposed project. Development of gravel source G-7 would require clearing and excavation over an area of approximately 19 acres, to a depth of 18 feet. The two other potential new gravel sources have not been fully evaluated, but are attractive due to their location along the proposed route, thereby reducing haul distances and associated impacts.

Full development of all elements of the Proposed Project will include: construction of 11.7 miles of new gravel roads, an adjacent buried pipeline/utility system, an additional 3.1 miles of buried pipeline/utility system adjacent to existing roads, three new drill pads, and upgrade of a fourth drill pad. Full development will require approximately 278,600 cubic yards of gravel from USFWS-designated material sites.

PROJECT PURPOSE AND NEED

The purpose of the Proposed Project is to explore for new natural gas reserves and to bring new natural gas reserves discovered into production to meet the rising energy needs of Cook Inlet area consumers. The Cook Inlet area of Southcentral Alaska currently produces more than 225 billion cubic feet of natural gas per year for consumption and export. More than 60 percent of Alaskans currently rely on natural gas from the Cook Inlet area to generate electricity and to heat homes and businesses. Developing Alaska's natural gas resources is vital to the state's economy and the well being of its growing population. The State of Alaska and the Kenai Peninsula Borough will collect taxes from SRS gas production.

The majority of coal, oil, and gas resources in the Project Area are owned by CIRI

through ANCSA conveyances. One of the primary purposes of ANCSA was to provide Alaska Natives with resources (such as oil and gas) that could be developed for economic benefit. CIRI will receive a royalty on gas produced by the Proposed Project. Oil and gas revenues have contributed substantially to dividend distributions of \$672 million paid to CIRI's shareholders over nearly 30 years. Under the provisions of ANSCA, 70 percent of revenues derived from resource developments, such as the Proposed Project, must be shared with the other Alaska Native Regional Corporations. To date, CIRI has shared \$168 million with other Regional Corporations.

THE NO ACTION ALTERNATIVE

The No Action Alternative is considered in this document as required by NEPA. The No Action Alternative means that a ROW would not be granted by the USFWS, a Section 404 Permit would not be granted by the USACE, and associated natural gas resources would not be developed. The USFWS does not have the authority to implement the No Action Alternative for this project; however, other agencies are not constrained in the same way by ANILCA. The natural gas resources that are proposed for development are either privately owned, or have been previously leased, thereby constituting valid in holdings within the KNWR. Federal regulations require that the owners of valid inholdings be provided adequate and feasible access for economic and other purposes, subject to reasonable regulation to protect refuge resources. However, the No Action Alternative establishes a baseline from which to compare action alternatives.

ACTION ALTERNATIVES CONSIDERED

For East SRS, several combinations of alternative access and adjacent pipeline/utility system alignments (Segments) and drilling/production pads are evaluated. For North SRS, an alternative road route is evaluated. Alternative alignments considered in the DEIS are identified in Figure ES-2.

Alignment Alternative East Swanson Road 2 (ES-2) initially follows the same route as proposed ES-1 to ES-A. ES-2 then follows a longer route for approximately 1.2 miles around the east and north sides of Krein Lake to East Swanson Pad C (ES-C – a third pad for more direct drilling to target gas deposits from the more northern route), then travels south approximately 0.75 miles to ES-B. ES-2 is longer than ES-1 by approximately 1.5 miles (8,260 feet), and includes two additional turnouts and an additional drill pad. This will require an additional 42,800 cubic yards of gravel but provides the advantage of placing the drill pad near the target zone, rather than relying on directional drilling from ES-B.

Alignment Alternative East Swanson Road 3 (ES-3) begins at the edge of the SRF, and runs east for approximately 7.4 miles to ES-B. The basic difference from the proposed alignment (i.e., ES-1), is that ES-3 follows an existing, reclaimed road for 1.3 miles, then follows the same route as ES-1 to ES-A and ES-B. This route is shorter than ES-1 by approximately 0.9 miles (4,350 feet) and requires 13,800 fewer cubic yards of gravel. Existing infield SRF pipelines might not have the capacity to transport gas from both East SRS and North SRS. Therefore, ES-3 might require construction of approximately 2.3 miles of additional pipeline from where

it begins in the SRF south to Tank Setting 1-27, depending on volume of gas produced.

Alignment Alternative ES-4 follows the ES-3 route from the SRF, and then follows ES-1 to ES-A. From there it runs north around Krein Lake to ES-C and then south to ES-B. Total distance will be approximately 0.7 miles (3,908 feet) more than ES-1 and will require approximately 26,600 cubic yards of additional gravel. Alternative ES-4 will also require additional pipeline/utility system construction to Tank Setting 1-27, as described for ES-3.

Alignment Alternative North Swanson Road 2 (NS-2) begins at the northern end of the SRF, and runs approximately 5.9 miles to NS-A. This alternative follows an existing “winter trail” that was originally used for ARCO exploration at BHU 22-25. NS-2 follows the winter trail north, passing 660 feet west of a small lake, and continues north before turning east around the north end of Scaup Lake, and then south to BHU 22-25, for a total of 4.7 miles. From BHU 22-25 – the route continues south for 1.2 miles through undisturbed land to NS-A. Alternative NS-2 is 2.5 miles (13,376 feet) longer than NS-1 and has an additional seven turnouts. Therefore, NS-2 will require 43,100 more cubic yards of gravel than NS-1. This alignment also might necessitate a separate, more direct ROW for the buried pipeline/utility system along the NS-1 alignment.

Additionally, alternatives that were dismissed from further consideration are presented in this document. These include alternative access road alignments, pipeline alignments, material sites, and pad locations. These alternatives were considered but rejected for further evaluation because they were determined to be technically or economically infeasible.

ENVIRONMENTAL CONSEQUENCES

The DEIS presents an analysis of the environmental consequences of the Proposed Project and each of the five alternatives, including the No Action Alternative. Impacts are categorized as either significant or insignificant. The DEIS also describes cumulative impacts, mitigation measures, the relationship between short-term uses of the environment and long-term productivity, and irreversible or irretrievable commitments of resources should the Proposed Project be implemented.

Direct, indirect, and cumulative impacts to the environment will occur as a result of the Proposed Project. Impacts may occur during any phase of the project, including construction, operation, maintenance, removal of facilities, and restoration. Some of these impacts will be of short duration (usually during construction), and some will occur over the life of the project. Most impacts can be avoided or minimized by following proper design and construction procedures and by compliance with regulatory requirements, including permit stipulations from federal and state regulatory agencies. The ultimate significance and duration of impacts will be influenced by efforts to detect and correct them, and to repair and rehabilitate the damaged environment.

The potential for some project-related impacts to be significant in either the short-term or long-term (or both) depends on the magnitude and duration of the impact. Some potentially significant impacts generally have a low probability of occurrence, but if they do occur, the consequences and potential risk to the environment could be great. Other potentially significant impacts have a high

probability of occurrence. The risk to the environment from potentially significant impacts can be somewhat mitigated by proper attention to prevention measures. Some impacts are considered significant because they occur within the KNWR.

The Proposed Project includes development of both the East SRS and North SRS. The proposed East SRS Alternative (ES-1) and North SRS Alternative (NS-1) routes must be considered together to understand the full impact of the Proposed Project. Some of the potentially significant impacts of the Proposed Project have been avoided by including site selection, design, and procedural measures. For example, a new crossing of the Swanson River was avoided as a result of project design changes resulting from input received through the public scoping process.

In summary, use and placement of 278,600 cubic yards of gravel from up to five potential material sites to fill or otherwise disturb over 184.2 acres of land within KNWR (including 23.17 acres of wetlands), to construct 11.7 miles of road, three new drill pads, and upgrade a fourth drill pad, is considered to be a significant long-term impact. This significant impact to KNWR resources will be mitigated over time, when project roads and pads are removed and restored in accordance with permit requirements.

Among the most significant potential project-related impacts are those affecting brown bears and other wildlife. Wildlife impacts will occur over the life of the Proposed Project and could be difficult to fully mitigate. Adverse impacts on vegetation, wetlands, land use, and recreation are also considered to be potentially significant. Some of these impacts are considered significant only

because they occur within the KNWR and are in conflict with the purposes for which the refuge was established.

Potential impacts of the Proposed Project on air quality, topography, geology, gravel, soils, water quantity, hydrology, water quality, fish, amphibians, threatened and endangered species, land ownership, cultural resources, visual resources, and subsistence are considered to be insignificant.

Environmental consequences of alternatives are generally similar to the Proposed Project but vary in degree depending on increased or decreased road and pipeline miles, pads and turnouts, and area filled with gravel or where vegetation is disturbed.

MITIGATION MEASURES

Mitigation measures have been adopted as part of the Proposed Project, or may be applied to the Proposed Project by ROW permit stipulation. Mitigation measures are implemented in order to reduce the significance of direct, indirect, or cumulative adverse environmental impacts. Most impacts can be mitigated by adherence to laws and regulations, permit stipulations, or commonly followed best management practices. In order to further mitigate potential adverse impacts to Refuge resources, stipulations will be incorporated in the ROW permit, a draft list of which is included in the DEIS.

ISSUES TO BE RESOLVED

USFWS will identify an environmentally preferred alternative after evaluating public comments on the DEIS.

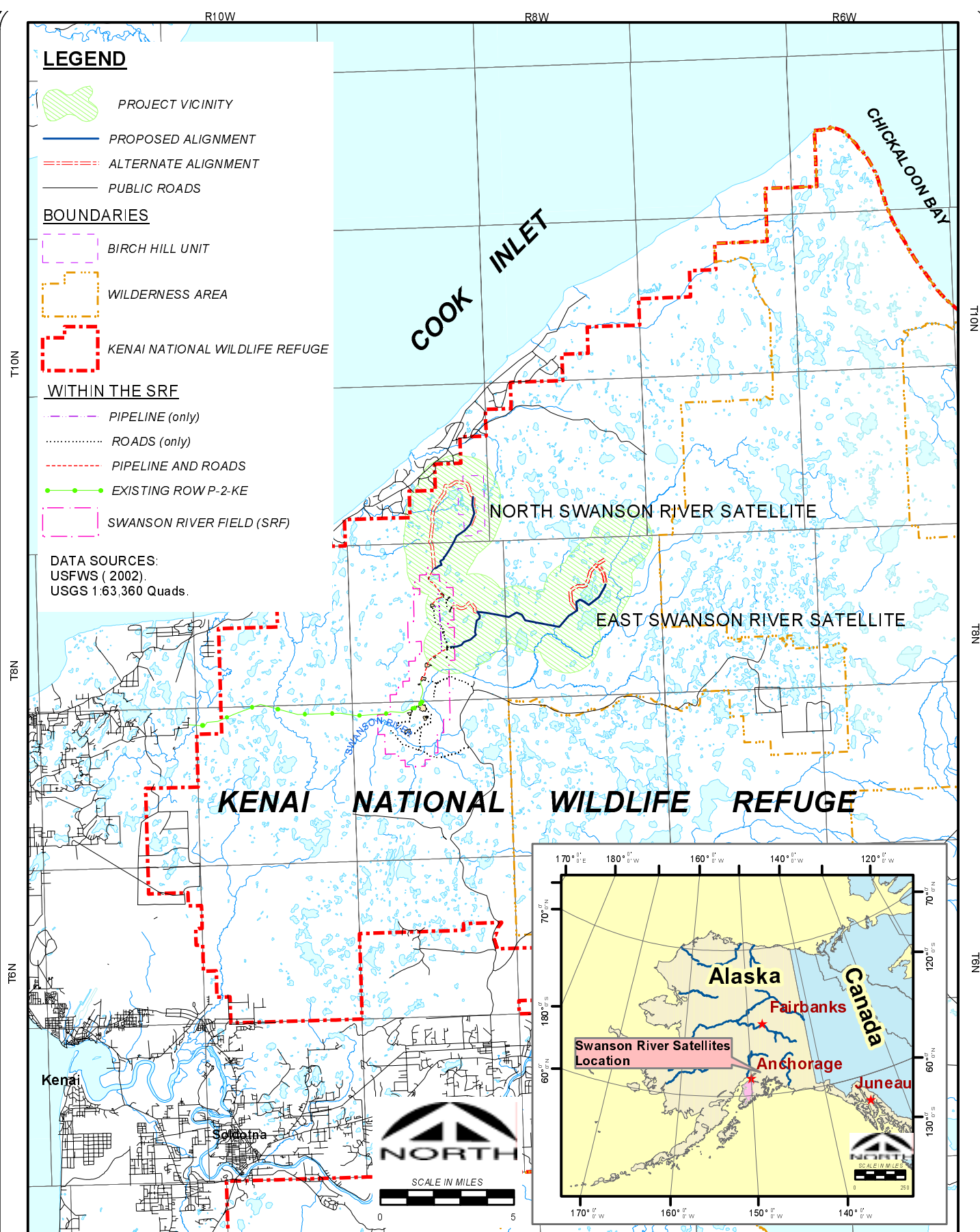


FIGURE ES-1

07-29-02

UNOCAL - SWANSON RIVER SATELLITES
KENAI NATIONAL WILDLIFE REFUGE, ALASKA



MWH

MONTGOMERY WATSON HARZA

ANCHORAGE, ALASKA

PROJECT VICINITY

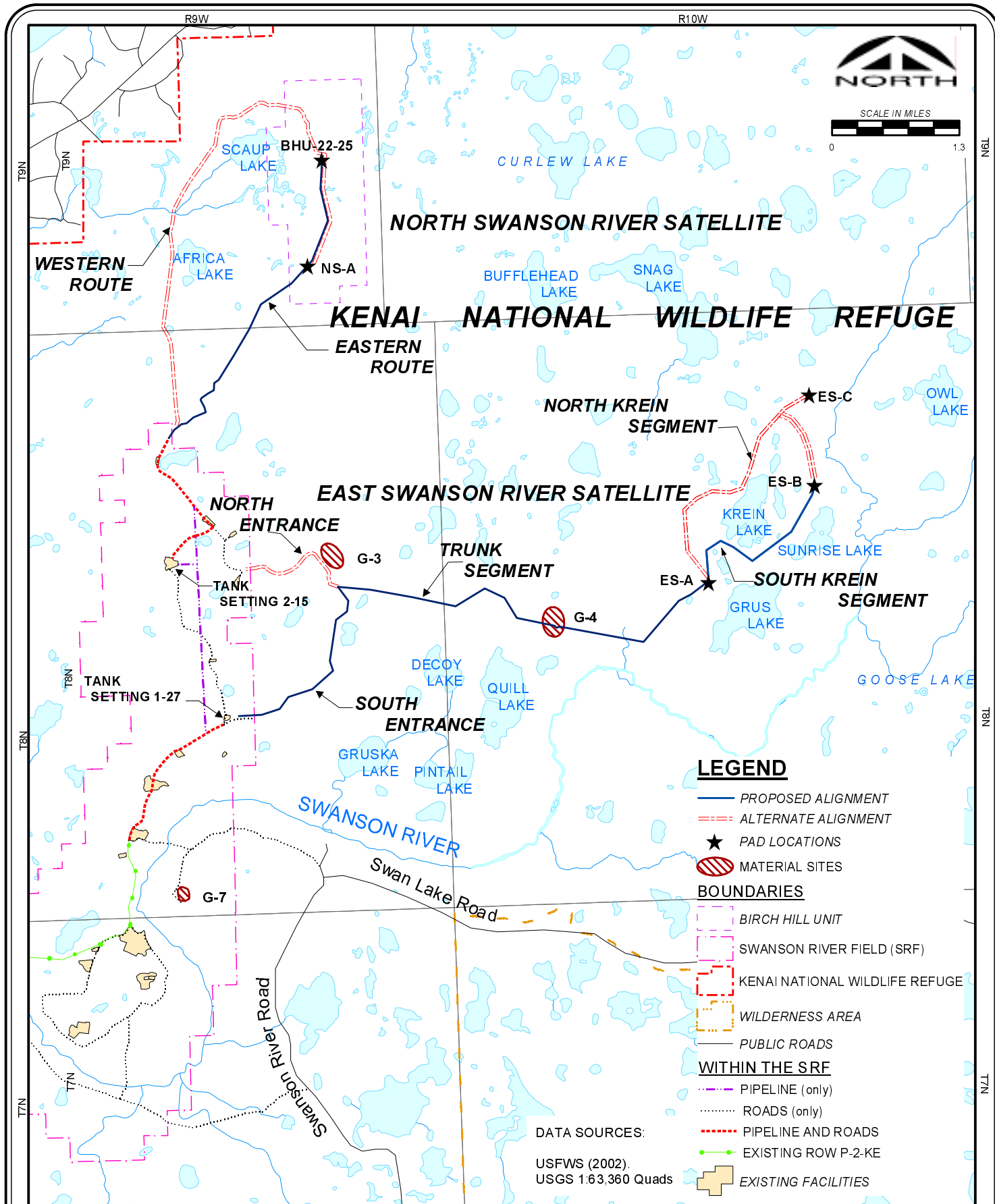


FIGURE ES-2

07-29-02

UNOCAL - SWANSON RIVER SATELLITES
KENAI NATIONAL WILDLIFE REFUGE, ALASKA

PROPOSED ROAD ALIGNMENTS AND SATELLITE LOCATIONS



MWH
MONTGOMERY WATSON HARZA

ANCHORAGE, ALASKA